

PROF. LIONEL SMITH BEALE, F.R.S.

PROF. LIONEL SMITH BEALE, F.R.S., whose death occurred on March 28 at the age of seventy-eight years, was the son of Mr. Lionel John Beale, and was educated at King's College School and King's College, London. A year after taking his degree in medicine he established a private laboratory in Carey Street, Lincoln's Inn, for pathological, microscopical, and chemical research and teaching; and in 1853, at the early age of twenty-five, was appointed professor of physiology and general and morbid anatomy at King's College. He afterwards held the chair of pathology, and finally that of the principles and practice of medicine at King's College, resigning the latter in 1896. For forty years Prof. Beale was physician to King's College Hospital, and among other honours and appointments received by him during his active career may be mentioned the Baly medal in 1871 for researches in physiology; Croonian lecturer to the Royal Society, 1865; Lumleian lecturer, Royal College of Physicians, London, 1875; president of the Royal Microscopical Society, 1879; and Government medical referee for England, 1891-1904.

As a teacher, Prof. Beale was remarkable for his lucidity; and his lectures were admirably delivered, riveting the attention of his hearers. He had the esteem of all his pupils; and those who had the privilege of a closer intimacy with him feel that they have indeed sustained a great loss by his death.

His principal work, that which gained him the Fellowship of the Royal Society, was on the minute structure of the tissues; "Beale's carmine stain" and his injection mixtures are well known to all microscopists.

Prof. Beale was the author of many works, among the best known being the "Archives of Medicine," containing researches carried out in the laboratory at Carey Street; "How to Work with the Microscope"; "The Microscope in Medicine"; "Protoplasm, Physical Life and Law"; "The Liver"; and "Slight Ailments and their Treatment," besides many papers in the Philosophical Transactions and other publications of learned societies.

R. T. H.

### NOTES.

THE fourteenth "James Forrest" lecture of the Institution of Civil Engineers will be delivered by Mr. K. A. Hadfield on Wednesday, May 2, the subject being "Unsolved Problems in Metallurgy."

THE Government of India has decided, with the approval of the Secretary of State, to establish an institute in India as a centre for practical instruction of medical officers and subordinates in the use and management of Röntgen ray apparatus, and as a depôt for the storage and repair of such apparatus. The institute will be located at Dehra Dun, and will be under the superintendence of an officer of the Indian Medical Service.

PROF. R. MELDOLA, F.R.S., has been made an Officier de l'Instruction publique of France for his services in connection with the foundation of the Alliance Franco-Britannique, of which association he is the honorary secretary.

A REUTER message states that, after perceptible shocks of earthquake, a crevice, out of which lava flowed, opened on the side of Mount Vesuvius, on March 28, some hundred yards from the upper station of the Funicular Railway. The eruption from the principal crater also continues.

At the Meteorological Office Mr. R. G. K. Lempfert has been appointed superintendent of the statistical branch, Mr. Ernest Gold has been selected for appointment as superintendent of the instruments branch, and Mr. J. A. Curtis succeeds Mr. J. S. Harding as cashier and chief clerk.

THE Easter excursion of the Geologists' Association will this year be to Lyme Regis. The party will leave London on Thursday, April 12, and return to town on Tuesday, April 17. A detailed itinerary and time-table has been published by the association. The excursion will be directed by Dr. H. B. Woodward, F.R.S., and Mr. G. W. Young, the excursion secretary.

THE death is announced of Mr. Carl Heinrich von Siemens. Born in 1829 at Menzendorf, in Mecklenburg, he was the sixth son of a family of fourteen. For the greater part of his life he cooperated with his brothers Werner, William, and Friedrich in the development of the various undertakings with which the name of Siemens is associated. A detailed notice of his career is published in the *Engineer* of March 30.

ACCORDING to a Laffan telegram from New York, dated March 31, the De Forest Wireless Telegraphy Company has been sending experimental messages from its station at Coney Island to Ireland every night for some time, and on March 28 a thousand words were transmitted, of which 572 were received and recorded. The longest distance that had previously been covered by this company's service was from Coney Island to Colon, 2100 miles; the new record is 3200 miles. The sending stations in Ireland are not yet completed, so that a tetrahedral kite is used temporarily for receiving work.

THE following are among the lecture arrangements at the Royal Institution after Easter:—Prof. W. Stirling, three lectures on glands and their products; Dr. P. Chalmers Mitchell, two lectures on the digestive tract in birds and mammals; the Rev. J. P. Mahaffy, two lectures on (1) the expansion of old Greek literature by recent discoveries, (2) the influence of ptolemaic Egypt on Graeco-Roman civilisation; Prof. W. J. Sollas, F.R.S., three lectures on man and the Glacial period; and Sir J. Dewar, F.R.S., two lectures on the old and the new chemistry. The Friday evening meetings will be resumed on April 27, when Prof. J. W. Gregory, F.R.S., will deliver a discourse on ore deposits and their distribution in depth. Succeeding discourses will probably be given by the Hon. C. A. Parsons, F.R.S., Prof. J. H. Poynting, F.R.S., Prof. A. Schuster, F.R.S., Mr. L. Hill, F.R.S., Prof. H. Moissan, F.R.S., Sir James Dewar, F.R.S., and others.

IN the House of Commons on Monday, Sir W. Foster asked why dead specimens of cancer, preserved in a non-deleterious fluid, have been declared to be forbidden admittance to the post, and why certain specimens, addressed to the Imperial Cancer Research Fund, were ordered to be destroyed immediately on their arrival in this country from abroad. In the course of his reply, Mr. Buxton said:—"The cancer specimens addressed to the Cancer Research Fund are, I am informed on the highest authority, harmless; and, as I am assured that the use of the post is of great importance for the successful prosecution of the researches of the fund, I hope to be able to make a special exception in their favour. I think it desirable, however, that the matter should be discussed with the delegates of the countries principally concerned at the approaching Postal Congress, and I have instructed

the British delegates accordingly. In the meantime, packets addressed to the Cancer Research Fund will be delivered."

THE following awards of medals and other honours for this year have just been decided by the council of the Royal Geographical Society:—A Royal (Founder's) medal to M. Grandidier, for the results of his many years' work on the island of Madagascar; a Royal (Patron's) medal to Dr. Robert Bell, F.R.S., director of the Geological Survey of Canada; the Victoria research medal to Prof. W. M. Ramsay, who has been working at ancient geography for many years, and is an acknowledged authority in that branch of study; the Murchison award to Major H. R. Davis, for his explorations in the Shan States, Kachin Hills, Yun-nan, Siam, and Sechuan; the Gill memorial to Major A. St. Hill Gibbons, for the exploring and survey work which he has done in Barotseland on his two expeditions in 1895-6 and in 1898-1900; the Cuthbert Peek fund to Major H. H. Austin, C.M.G., for his exploration in the Lake Rudolf region, the Sobat region, and his expedition from Omdurman to Mombasa *via* Lake Rudolf in 1900 and 1901; and the Back bequest to Major R. G. T. Bright, C.M.G., for his exploring work in the Sudan, Uganda, and East Africa.

IN vol. vii., article v., of the Bulletin of the Illinois State Laboratory, Mr. F. Smith continues his notes on North American oligochaete worms, dealing in this instance with a species of *Lumbriculus*.

THE report of the Australian Museum, Sydney, for the year ending June, 1905, is before us. The most important addition during the year is a collection of ethnological specimens from North Queensland made by Dr. W. A. Roth, protector of aborigines for that district.

IN contrasting different statements as to the purpose and function of museums, the March issue of *Museum News* (Brooklyn, N.Y.) takes occasion to rebuke the "Century Dictionary" for employing the word "curiosities" in this connection, the accumulation of "curiosities" being exactly what every curator who knows his business does his best to avoid.

THE thirty-fourth number of the publications (they have no general title) of the Bureau of Government Laboratories at Manila is devoted to an account of birds from Mindoro and the adjacent islets, and to notes on three birds of rare occurrence in Luzon, one of these latter being the bittern. The first paper, which is well illustrated, contains descriptions of several new species, among them being a needle-tailed swift.

A FULLER account of the Black Hills beetle (*Dendroctonus ponderosae*), a scolytid infesting pine-trees in the Black Hills of South Dakota and elsewhere, described by the author some time ago, is given by Dr. A. D. Hopkins in Entomological Bulletin No. 56 of the U.S. Department of Agriculture. The serious nature of the damage caused by this beetle is indicated by the statement that between 700 and 1000 million cubic feet of timber have been destroyed by it in the Black Hills Forest Reserve alone.

THE third part of the *Bergen's Museum Aarbog* for 1905, of which we have received a copy, contains a long and fully illustrated paper by Mr. O. J. Lie-Pettersen on the marine rotifers of Norway, the result of investigations commenced in the summer of 1900, and a second by Mr. H. Brock on Norwegian medusas. The two last papers

in this part are devoted to archaeological subjects. We have also received a copy of the *Aarsberetning* of the same institution, containing the director's report of progress for the past year.

PART iii. of the third volume of the Transactions of the Hull Scientific and Field Naturalists' Club shows careful attention on the part of that body to local subjects. The first article, for instance, deals with the natural aspects of Hull and its neighbourhood; and others are devoted to the East Riding Mycetozoa, local diatoms, and reclaimed lands of the Humber district. Two local celebrities are accorded biographical notices, with portraits, while the editor, Mr. T. Sheppard, discusses the position of the Hull Museum as regards education.

THE papers in the March *Zoologist* comprise one on the birds of the Færøes, and a second on those of Anglesey; while in a third Mr. R. Warren records a change in the habits of herrings visiting Killala Bay, county Mayo. It appears that since 1899 the fish, which used to keep to the bay, have taken, for about three weeks in the autumn, to entering the estuary and tidal part of the river. So close have they on some occasions come in-shore that scores may be taken with a landing-net.

THE contents of the first part of vol. lxxxi. of the *Zeitschrift für wissenschaftliche Zoologie* comprise one paper by Mr. W. Schimkewitsch, of St. Petersburg, on the developmental history of the arachnid *Thelyphonus caudatus*, and its comparison with that of other members of the same group. In a second paper Mr. R. Meyer discusses the histology of the nervous system of the common starfish, *Asterias rubens*, while in the third Mr. O. Kohlmeier describes the elastic tissue in the mucous membrane of the palate of the brown rat, the distribution of which has never previously been worked out.

AN extinct volcano in Arizona and its crater form the subject of a paper by Mr. D. M. Barbinger in the issue of the Proceedings of the Philadelphia Academy for December last. One of the most remarkable features connected with this mountain is the presence of an enormous mass of meteoric iron. As the result of his investigations, the author comes to the conclusion that a huge meteor, of which at least the outer coat was metallic, fell to the earth in this locality, and that its size was so great that portions of it were fused and detached. Further, a large hole in the adjacent strata was made by the fall of the meteor.

DR. W. J. HOLLAND has sent us a paper on the osteology of the American dinosaur *Diplodocus*, with special reference to the model of the skeleton presented by Mr. Carnegie to the Natural History Museum, and installed by Dr. Holland himself. In this paper, which forms No. 6 of the second volume of the Memoirs of the Carnegie Museum, the author directs attention to the pose in which the skeleton has been mounted, explaining that, in his opinion, the peculiar structure of the occipital region renders the angle which the skull forms with the vertebral column a matter of necessity. Dr. Holland finds himself unable to accept Baron Nopsca's interpretation of the nature of the problematical bone which has been regarded as a clavicle.

THE black locust tree (*Robinia pseudo-acacia*) is such a familiar inhabitant of railway banks, especially in parts of France, that we read with interest Dr. Charles A. White's account, in the *Popular Science Monthly* for

March, of the troubles which have beset attempts to establish it in similar situations in America, especially in Pennsylvania. The wood of the tree is excellently suited for making fence posts and railroad ties, but, unfortunately, as soon as the stems attain a sufficient size to be of use they are liable to be destroyed by the burrowing larvæ of a longicorn beetle (*Cyllene robiniae*); and so persistent is this beetle in its attacks, that Dr. White considers the further planting of these trees to be sheer waste of labour and money.

THE second number of the *Bio-Chemical Journal* contains four papers of considerable interest, and if the present standard be maintained we predict a long and useful "life" for this new publication. Mr. Leonard Hill discusses filtration as a possible mechanism in the living organism, and concludes that it does not occur under natural conditions; Mr. G. S. Haynes, writing on the pharmacological action of digitalis, strophanthus, and squill on the heart, considers that it is essential that these drugs should be standardised, as the amounts of active constituents vary much. He finds that strophanthus is 8 to 10 times as toxic as digitalis, and that squill is an excellent cardiac stimulant. Dr. Roaf and Mr. Whitley contribute a paper on the action of acids, alkalies, and salts on the tadpole; and Dr. MacLean details observations on the Fehling test for dextrose in urine, proving that creatinin is the cause of the masking of the sugar reaction which sometimes occurs in urine-testing.

A BRIEF description appears in the *Journal of the Royal Microscopical Society* (February) of a newly discovered synangium that, as the writer, Mr. D. M. S. Watson, states, would two years ago certainly have been regarded as the fructification of a marattiaceous fern. The synangium consists of from four to seven sporangia grouped round a central receptacle that is hollowed out into a cup at the top, thus bearing considerable resemblance to the sporangia of the recent fern *Kaulfussia* and of the fossil species *Ptychocarpus unitus*. Having regard to Mr. Kidston's discovery that the synangium of *Crossotheca*, formerly considered to be that of a marattiaceous fern, was the male fructification of *Lyginodendron*, Mr. Watson leaves it open whether the new species, *Cyathotrachus alatus*, should be placed in the ferns or cycadofilices.

In connection with the work of the instructors in horticulture that have been appointed by certain county councils in Ireland, it has been found that there is need of a scientific journal that will help to supply the knowledge required by small farmers and occupiers of holdings. To meet this want a new monthly publication, *Irish Gardening*, has been started, the first number having been issued this month. After a short note of encouragement from Sir Horace Plunkett, Mr. F. W. Moore provides an appropriate article on the present condition of horticulture in Ireland. The use and value of horticultural demonstration plots is discussed by Mr. J. G. Toner, and a trite comparison of English and Irish potatoes is contributed by Prof. J. Wilson in which, while upholding the quality of the Irish potato, he suggests that there is scope for new Irish varieties. Judging from these articles and the numerous notes on various topics, the new journal promises to fulfil its purpose of directing attention to the scientific principles that underlie good garden practice.

THE discussion on "The Origin of Gymnosperms" at the Linnean Society, arranged for the meeting on March 15, drew a very large audience. Prof. F. W. Oliver, in

opening the discussion, referred to the generally accepted view that the line of descent of the gymnosperms had proceeded through the ferns and cycads, this view being supported by the discovery of multiciliate spermatozoids in Ginkgo and in cycads, and by the recognition of the fossil group of cycadofilices. The discovery of seeds in connection with several of the Palæozoic "ferns" had led to their transference to a new and rapidly increasing group of pteridosperms. If the Palæozoic were an "age of pteridosperms" rather than an "age of ferns," was the filicinean origin of the gymnosperms weakened, and should a lycopodiaceous origin be sought? Personally, he favoured a derivation of the pteridosperms and eventually the cycads and Cordaites from the ferns. Mr. E. A. N. Arber, dealing with the earlier geological records of the true ferns, also expressed his adherence to the fern-cycad line of descent. He instanced the Botryopteridæ as true ferns existing in the Carboniferous and Permian ages, and pointed out that the connection of gymnosperms and ferns must have been far back in the Palæozoic epoch. Prof. A. C. Seward, while accepting the filicinean origin for the cycads, dissented from the view that the conifers followed the same line of descent. His recent investigations of the Araucariæ pointed to their being a very ancient group of gymnosperms, and for them, if not for conifers generally, he considered a lycopodiaceous derivation as the more probable. Owing to the late hour, Dr. D. H. Scott was unable to give his address, as announced, so the proceedings were postponed to the meeting fixed for May 3, when an opportunity will be afforded for other members to take part in the discussion.

THE work of the expedition dispatched by the Smithsonian Institution of Washington to the Canadian Rockies and Selkirks, under the direction of Prof. W. H. Sherzer, of the Michigan State Normal School, is described in the report of the late Dr. S. P. Langley for the year ending June 30, 1905. The expedition had a successful season's work on the glaciers along the line of the Canadian Pacific Railway. A selection was made of those five glaciers which are most accessible to the student of glacial geology, and these were found to exhibit the characteristics of glaciers throughout the world. Four or five days of comfortable railway travel places an investigator in the midst of snow-fields rivalling those of Switzerland, and the ice bodies descending from these fields may be studied from modern hotels as a base, and a horse may be ridden to the feet of the glaciers studied by the expedition. So far as is known, there is in this district the most magnificent development of glaciers of the Alpine type on the American continent, and the purpose of the survey was to gather as much information as possible concerning them. Many photographs illustrating the details of glacial structure were obtained, and a full report of the expedition may be expected later.

WE have received a copy of the results of the meteorological observations made at stations under the control of the Deutsche Seewarte for the year 1904. These observations include those made at ten stations of the second order, at which readings are taken three times daily; at four of these stations, viz. Hamburg, Wustrow, Memel, and Borkum, hourly values and means obtained from self-recording instruments are given in addition. For all days on which stormy weather was experienced on the German coasts, observations for several times a day are published from those of the fifty-six storm signal stations affected. This valuable publication forms one of the series of "Meteorological Year-books" issued by the various organisations

of the German Empire; these are all identical in form, the plan of which is practically that adopted by the International Meteorological Congress at Rome in 1879, and leaves nothing to be desired. With the exception of an occasional improvement, such as the reduction of the old anemometrical factor, which assumed that the velocity of the wind was three times as great as the velocity of the cups of the instrument, and the addition of a table showing for each station the difference between local time and mid-European time adopted in Germany in April, 1893, there has been practically no change in the contents of publication for many years. This continuity of form is a great advantage, and considerably enhances the value of the work.

WE have received from the director of the Vatican Observatory, Sig. P. Angelo Rodriguez, O.S.A., vol. vii. of the *Pubblicazioni della Specola Vaticana* (Tipografia Vaticana, Rome, 1905). In these pages we first have the individual daily meteorological observations made during the years 1902 to 1904, both years inclusive. These are graphically plotted in three tables which are given at the end of the volume. Sig. Mg. Alfredo Tonetti contributes a valuable study of the cloud observations made during the years 1891-6, and this is followed by two appendices, which include observations of meteors for the years 1891 to 1896, and the mean monthly values of cloudiness for the same period. Among other sections of interest may be mentioned a brief discussion of the exceptional high temperatures recorded in July and August of the year 1904, comparison data being added commencing in 1890. Sun-spot observations are also dealt with, and, in addition to the individual daily observations, a summary for each year, commencing with 1896, is added. Special reference is made to the large spot of February, 1905, and a reproduction (original size) of the solar disc for February 7 is added, the original photographic image measuring nearly eleven inches in diameter.

IN the Transactions of the Institution of Engineers and Shipbuilders in Scotland (vol. xlix., part v.), Mr. W. A. Ker publishes a suggestive paper on some common errors in the use of electric motors for machine driving. In it he gives a list of common machines, with the types of motors which he considers most suitable for them.

ATTENTION is directed in the *Engineering and Mining Journal* (vol. lxxxii., No. 10) to the very low cost of ore dressing which has been attained at the mill of the Osceola Copper Mine, Lake Superior. The average cost per ton of rock stamped in 1905 was only 8½d., as against 9d. in 1904. These extraordinary figures were obtained in the treatment of a million tons of rock per annum, all the ore passed through the mill having been crushed to go through a ¼-inch to 3/16-inch round hole.

THE locomotive industry is dealt with in an exhaustive paper by Mr. L. Le Chatelier in the *Bulletin de la Société d'Encouragement* (vol. cviii., No. 2). Beginning with Trevithick's locomotive of 1803, he illustrates the leading types, and expresses the opinion that the works of the Hanover Engineering Company represent the most perfect example of the international locomotive industry. The Crewe works, with their 7500 workmen and their annual output of seventy-five locomotives, are referred to by the author in terms of warm admiration.

"ECONOMIC STUDIES IN ITALY" form the subject of a letter by Prof. Achille Loria in the *Economic Journal* for March. A noteworthy feature of Italian economics is the absence of any scientific treatment of socialistic problems.

IN the Bulletin of the Belgian Royal Academy (1905, xi.), the death is announced of the oldest member, M. Gustave Davalque, who was elected associate in 1854 and member in 1859, and drew up reports on mineralogy for the society subsequent to 1872.

PROF. LUIGI BERZOLARI contributes to the *Rendiconti* of the Lombardy Institution an interesting account, extending to more than sixty pages, of the work of the late Prof. Luigi Cremona. A list of previous biographical notices is given in a footnote.

PROF. G. CESÀRO, of Liège, describes in the Bulletin of the Belgian Academy, x., a new method of proving geometrically the principal formulæ of spherical trigonometry, notably Lhuillier's and Euler's formulæ, Napier's and Delambre's analogies, and the expressions for the radii of the circles of a triangle.

MR. H. M. TAYLOR, F.R.S., has published in the *Messenger of Mathematics*, No. 414, a collection of geometrical dissections, in which it is shown how to transform figures from one shape into another by division into a definite number of parts and re-arrangement of the parts. While these constructions afford a highly interesting study, it may be desirable to point out that if it be required, for example, to convert a rectangle into a square of equal area by this method, the construction presupposes a knowledge of the side of the required square.

IN the Bulletin of the American Mathematical Society for January Prof. Jacques Hadamard gives a review in French of the late Prof. Willard Gibbs's "Elements of Statistical Mechanics," which appeared in 1902. Based as the review is on a detailed study of Gibbs's work and of criticisms thereon, the notice forms in some respects an innovation in reviewing which might with advantage be followed on other occasions in connection with mathematical works. It is certain that the book in question contained many features that could only be properly judged after long and minute study.

IN a paper reprinted from the *Abhandlungen* of the Royal Academy of Saxony, xxix., 4, Dr. Otto Fischer discusses the dynamics of the motion of a system of bodies jointed together and moving in space. An illustration of such jointed systems is afforded by the limbs of animals. In general, a system of  $n$  jointed bodies has  $3n+3$  degrees of freedom, but there are many cases in which the number is less, and the author shows how the equations can be simplified by replacing the system by a dynamically equivalent set of particles or "reduced system."

UNDER the title "Abhandlung zur Didaktik und Philosophie der Naturwissenschaft," Messrs. Julius Springer, of Berlin, are issuing a series of pamphlets, in the form of monograph supplements to the *Zeitschrift für den physikalischen und chemischen Unterricht*. The object of these pamphlets is to give expositions of various points connected with the teaching of the sciences in question. No. 5 of the series is by Prof. Hans Keferstein, of Hamburg, and contains an exposition of the elementary properties of lenses and optical combinations treated from an experimental point of view. In the introduction the author points out that two of the various branches of physics, mechanics and optics, are made to assume a more mathematical aspect than the rest, the former by introducing the concept of particles, which reduces the study to that of certain systems of *points*, the latter by the concept of rays, leading to the study of certain systems of *lines*. The

present pamphlet treats exclusively of the magnifications produced by lenses, the paths of the rays, and the principles of the microscope and telescope.

THE danger which may accompany the teaching of elementary chemistry to children has been sadly illustrated by the death of a girl of fifteen years of age—a pupil at the Plymouth Secondary School—caused by swallowing a strong solution of caustic soda while working in a practical chemistry class. The coroner's inquest showed that the child—one of a class of eight—misinterpreted the directions given by the instructor, and sucked into a pipette a concentrated solution of the alkali without previously diluting it, as she had been told to do; in doing this she managed to swallow some of the solution. In view of the fact that three other pupils out of the eight in the class gave evidence showing that they also had not followed the directions given, it is clear that, in order to guard against such accidents, the experiments should be devised in such a way that, in the event of a misunderstanding, no evil results may accrue. In the present case, for instance, in which the neutralisation of sulphuric acid by caustic soda was being studied, the concentrated solutions might have been diluted by the demonstrator in front of the class, and the diluted solutions thus prepared then have been used for the pupils' measurements. Other simple expedients could readily be suggested in which the use of an ordinary pipette is avoided. In the practical study of chemistry there are many possibilities of accident, and this should be borne in mind by the examining and inspecting authorities which prescribe the work to be done in school laboratories, and by the teachers who devise experiments for their pupils. It should be unnecessary to add that the instructor, particularly when he has to deal with children, should not only have seen chemical experiments performed, but have acquired by a prolonged course of laboratory work a real knowledge of manipulation and of the dangers likely to be incurred in any case.

MESSRS. JOHN J. GRIFFIN AND SONS, LTD., have issued a third edition of their well illustrated list of apparatus for electrochemistry, arranged for students working through Dr. Lüpke's "Grundzüge der Electrochemie."

A POPULAR article, with several striking illustrations, upon the eye-spots exhibited by various creatures as ornaments or for protective purposes appears in the April number of *Pearson's Magazine*.

THE current issue of the *Home Counties Magazine* contains, among other interesting matter, a reprint of a lecture by Mr. M. J. C. Meiklejohn on the place-names of Northwood and district, and the first of a series of articles in which the editor, Mr. W. Paley Baildon, has collected all available references to Paul's Cross, and arranged them in chronological order.

THE current number of *Past and Present*, the successor to the *Natural History Journal*, published in connection with the Friends' Schools, is before us. The magazine shows that great encouragement is given in these schools to observational science, and that the boys are in the habit of making and recording outdoor observations in biological and meteorological science. The illustrations of the school buildings are proof enough that the claims of science are not forgotten in the school curriculum.

SEVERAL parts of volumes of Transactions of the Royal Society of Edinburgh, containing papers read before the society during the sessions 1902-3, 1903-4, and 1904-5, have just been received; and also vol. xliii. of the Transactions,

edited by Dr. A. Buchan, F.R.S., and Mr. R. T. Omond, devoted to the Ben Nevis observations during the years 1893-7. As abstracts of the papers read before the society appear periodically among our reports of meetings, it is unnecessary to refer again to the many important contributions now printed in full in the Transactions recently issued.

THE fifth part of vol. ii. of the Proceedings of the University of Durham Philosophical Society has been received. The number contains five papers read before the society between February 9 and April 27, 1905, together with the proceedings for the academic year 1904-5. Prof. H. Stroud contributes a paper on spark-gap experiments for detecting radio-activity, Dr. J. A. Smythe a note on a contact rock from the Island of Mull, Mr. A. Brennan notes on abnormal flowers of *Lilium Martagon* (Linn.), Dr. D. Woolcott a paper on the pre-Glacial "wash" of the Northumberland and Durham coalfield, and Mr. G. Thomson one on the effect of light on selenium.

### OUR ASTRONOMICAL COLUMN.

#### ASTRONOMICAL OCCURRENCES IN APRIL:—

- April 5. 5h. 48m. to 6h. 42m. Moon occults  $\alpha$  Leonis (Regulus, mag. 1.3).  
 6. 7h. 3m. to 7h. 57m. Moon occults  $\chi$  Leonis (mag. 4.7).  
 „ 15h. 50m. to 16h. 19m. Moon occults  $\sigma$  Leonis (mag. 4.1).  
 11. 11h. 30m. Minimum of Algol ( $\beta$  Persei).  
 14. 8h. 19m.  
 15. Venus. Illuminated portion of disc = 0.967. Or Mars = 0.978.  
 16. 15h. 48m. to 16h. 29m. Moon occults  $\theta$  Capricorni (mag. 4.2).  
 18. 23h. Saturn in conjunction with Moon. Saturn  $0^{\circ} 22' N$ .  
 24. 8h. 22m. Transit (ingress) of Jupiter's Satellite III. (Ganymede).  
 „ 15h. Venus in conjunction with Moon. Venus  $5^{\circ} 11' N$ .  
 26. 4h. Jupiter in conjunction with Moon. Jupiter  $4^{\circ} 16' N$ .  
 „ 5h. 42m. Near approach of Moon to  $\alpha$  Tauri (Aldebaran).  
 27. 8h. 51m. to 9h. 48m. Moon occults  $\eta$  Tauri (mag. 4.6).  
 30. 11h. 33m. to 12h. 28m. Moon occults  $\zeta$  Cancri (mag. 4.7).

COMET 1906b.—A part of the ephemeris for comet 1906b (Kopff), calculated by Herr M. Ebell and published in No. 4080 of the *Astronomische Nachrichten*, is given below:—

#### Ephemeris 12h. M.T. Berlin.

1906	$\alpha$ (true) h. m. s.	$\delta$ (true) ° ' "	$\log r$	$\log \Delta$	Brightness
April 6	11 22 53	.. 2 24 ..	0.5355	0.3983	0.81
14	11 21 18	.. 2 28 ..	0.5397	0.4128	0.74
22	11 20 38	.. 2 26 ..	0.5440	0.4291	0.67
30	11 20 58	.. 2 20 ..	0.5484	0.4468	0.61

Unit brightness on March 3 = about mag. 11.0.

This comet is still in the constellation Leo, near to the star  $\tau$ , which is on the meridian at about 11 p.m.

The suggestion that this object was a periodic comet of short period is not confirmed by the observations.

Observing at Strassburg on March 17, Dr. Wirtz recorded that the comet had a nucleus of mag. 11.5, the total magnitude being 11.0. The nebulosity was only 0.7 in diameter, and appeared to be extended towards position angle  $270^{\circ}$ .

COMET 1905c.—The following is an extract from Herr Wedemeyer's ephemeris for comet 1905c (Giacobini) as published in the supplement to No. 4080 of the *Astronomische Nachrichten*:—